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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: A. Smith, *et al.*
Serial No.: 10/800,110
Filed: March 12, 2004
Confirmation No.: 8924
Customer No.: 33123
For: *PROCESS FOR
DETERMINATION OF
OPTIMIZED EXPOSURE
CONDITIONS FOR
TRANSVERSE DISTORTION
MAPPING*
Art Unit: Not yet assigned
Examiner: Not yet assigned

CERTIFICATE OF MAILING PURSUANT TO 37 CFR 1.8

I hereby certify that this correspondence and the attached papers are being deposited with the United States Postal Service with sufficient postage as first class mail on the date indicated below in an envelope addressed to:

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7/8/04
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Michelle Molendy
Signature

INFORMATION DISCLOSURE STATEMENT
IN ACCORDANCE WITH 37 C.F.R. §§ 1.97-1.98

Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

Sir:

Because this Information Disclosure Statement is filed prior to receipt of a First Office Action on the merits of the above-captioned application, a fee for filing this statement should not be due. If, however, it is determined that a fee is due, then any fees that may be due in connection with filing this paper may be charged to Deposit Account No. 50-1213.

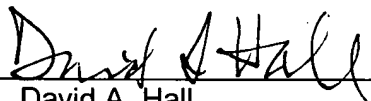
In accordance with the duty of disclosure imposed by 37 C.F.R. § 1.56 to inform the Patent Office of all material references known by Applicant or Applicants' representative, this Information Disclosure Statement prepared in accordance with 37 C.F.R. §§ 1.97-1.98 is hereby submitted. The Form PTO-1449 (3 pages) is provided herewith for filing in connection with the above cited application. The cited references that comprise issued U.S. patents are not attached, per the Notice of waiver published in the Official Gazette on August 5, 2003. A copy of the non-patent documents are provided, per 37 C.F.R. § 1.98(a)(2).

The document(s) cited on the Form PTO-1449 are in the English language. Hence, in accordance with the requirements of 37 C.F.R. § 1.98, as amended effective March 16, 1992, no further explanation of the listed items is necessary.

Although these documents and information are made known to the Patent and Trademark Office in compliance with Applicants' duty of disclosure, such disclosure is not to be construed as an admission by Applicants or Applicants' representative that any of the references, singly or in any combination thereof, is effective as prior art against the subject application. In accordance with 37 C.F.R. § 1.97(h), the filing of this Information Disclosure Statement shall not be construed to mean that a search has been made or that no other material information as defined in 37 C.F.R. § 1.56(b) exists.

Applicants respectfully request that the Examiner review the foregoing references and request that they be made of record in the file history of the above-captioned application.

Respectfully submitted,
HELLER, EHRMAN, WHITE & McAULIFFE LLP

By: 
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet	1	of	5
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Complete if Known

Application Number	10/800,110
Filing Date	March 12, 2004
First Named Inventor	A. Smith
Art Unit	Not yet assigned
Examiner Name	Not yet assigned
Attorney Docket Number	38203-6295

U. S. PATENT DOCUMENTS

FOREIGN PATENT DOCUMENTS

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Signature**

Date
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		Application Number	10/800,110
		Filing Date	March 12, 2004
		First Named Inventor	A. Smith
		Art Unit	Not yet assigned
		Examiner Name	Not yet assigned
Sheet	2	of	5
		Attorney Docket Number	38203-6295

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
	I	G. Muller, "The Waferstepper Challenge: Innovation and Reliability Despite Complexity", Version 1, pp. 1-11, September 10, 2003.	
	J	"KLA 5105 Overlay Brochure", KLA-Tencor	
	K	H.G. Müller et al., "Large Area Fine Line Patterning by Scanning Projection Lithography", MCM Proceedings, pp. 100-104, 1994.	
	L	J. van Schoot et al., "0.7 NA DUV Step & Scan System for 150nm Imaging with Improved Overlay", SPIE Vol. 3679, pp. 448-456, 1999.	
	M	M.A. van den Brink et al., "Direct-Referencing Automatic Two-Points Reticle-To-Wafer Alignment Using a Projection Column Servo System", SPIE, Optical Microlithography V, Vol.	
	N	A. Erdmann et al., "Influence of Optical Nonlinearities of Photoresists on the Photolithographic Process: Applications", SPIE, Vol. 2726-29, 1996.	
	O	J.H. Bruning, "Optical Lithography - Thirty Years and Three Orders of Magnitude", SPIE, Vol. 3051, pp. 14-27.	
	P	B.E. Newnam et al., "Development of XUV Projection Lithography at 60-80 nm", SPIE, Vol. 1671, pp. 419-436, 1992.	
	Q	J.E. Bjorkholm et al., "Reduction Imaging at 14 nm Using Multilayer-coated Optics: Printing of Features Smaller than 0.1 μm", J. Vac. Sci. Technol. B 8 (6), pp. 1509-1513, 19	
	R	"Quaestor Q7 Brochure", Bio-Rad Semiconductor Systems.	

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	S	D. MacMillen et al., "Analysis of Image Field Placement Deviations of a 5X Microlithographic Recuction Lens", SPIE Vol. 334, pp. 78-89, 1982.	
	T	G.C. Robins et al., "Experimental Assessment of Pattern and Probe-Based Aberration Monitors", SPIE, Microlithography Proceedings, Vol. 5040-149, pp. 1-12, 2003.	
	U	J. Sung, "Aberration Measurement of Photolithographic Lenses by Use of Hybrid Diffractive Photomasks", Applied Optics, Vol. 42, No. 11, pp. 1987-1995, April 10, 2003.	
	V	International Technology Roadmap for Semiconductors, 2001 Edition", SEMATECH, pp. 1-21.	
	W	F. Schellenberg, "Resolution Enhancement with OPC/PSM", Future Fab International, Vol. 9, 2000.	
	X	I. Pollentier et al., "Thinking Outside the Box for Improved Overlay Metrology", SPIE Microlithography Proceedings, Vol. 5038, pp. 12-16, 2003.	
	Y	R. Martin et al., "Measuring Fab Overlay Programs", SPIE Metr. Inspection, and Process Control for Microlithography, XIII, pp. 64-71, March 1999.	
	Z	R. DeJule, "Mix-and-Match: A Necessary Choice", Semiconductor International, pp. 66-76, February 2000.	
	AA	J. Armitage, "Analysis of Overlay Distortion Patterns", J. Kirk, SPIE, Vol. 921, pp. 207-221, 1988.	
	AB	J. Wyant et al., "Basic Wavefront Aberration Theory for Optical Metrology", ISBN 0-12-408611-X, Chapter 1, pp. 1-53, 1992.	

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	AC	T. Brunner, "Impact of Lens Aberrations on Optical Lithography", IBM, Vol. 41, pp. 1-2, 1997.	
	AD	"TWINSCAN 1100 Product Literature" ASML.	
	AE	C. Ausschnitt, "Distinguishing Dose from Defocus for In-line Lithography Control", SPIE, Vol. 3677, pp. 140-147, 1999.	
	AF	L. Thompson et al., "Introduction to Microlithography", ACS, 2nd Edition, 1994, p. 69.	
	AG	G. Moore, "Cramming More Components Onto Integrated Circuits", Electronics, Vol. 38, No. 8, 1965.	
	AH	P. Rai-Choudhury, "Handbook of Microlithography, Micromachining, and Microfabrication", SPIE Press, Microlithography, Vol. 1, pp. 417, 1997.	
	AI	M.T. Takac et al., "Self-Calibration in Two-Dimensions: The Experiment", SPIE Vol. 2725, pp. 130-146.	
	AJ	M.A. van den Brink et al., "Matching Management of Multiple Wafer Steppers Using a Stable Standard and a Matching Simulator", SPIE Integrated Circuit Metrology, Inspection, and	
	AK	M.R. Raugh, "Error Estimation for Lattice Methods of Stage Self-Calibration", SPIE Vol. 3050, pp. 614-625.	
	AL	T.F. Hasan et al., "Automated Electrical Measurements of Registration Errors in Step-and-Repeat Optical Lithography Systems", IEEE Transactions on Electron Devices, Vol. ED-27	

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	AM	C.A. Mack, "Inside PROLITH: A Comprehensive Guide to Optical Lithography Simulation", pp. 137-151.	
	AN	M. Dusa et al., "Comprehensive Focus-Overlay-CD Correlation to Identify Photolithographic Performance", SPIE Vol. 2726, pp. 545-554.	
	AO	A.J. de Ruyter et al., "Examples of Illumination Source Effects on Imaging Performance", Arch Chemicals Microlithography Symposium, pp. 1-8, September 22, 2003.	

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